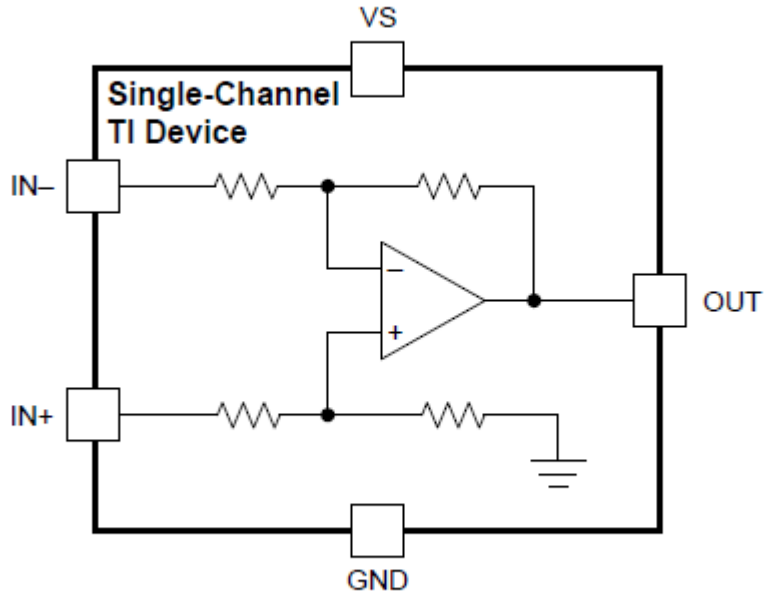


# FIT Rate, Failure Mode Distribution

## INA180-Q1

Automotive, low- and high-side voltage output, current-sense amplifiers

**Functional Block Diagram**



| Failure Rate Mission Profile (1) | Per 10 <sup>9</sup> Hours (FIT) |
|----------------------------------|---------------------------------|
| Total FIT Rate                   | 4                               |
| Die FIT Rate                     | 2                               |
| Package FIT Rate                 | 2                               |

| Failure Modes                        | Failure Mode Distribution (%) |
|--------------------------------------|-------------------------------|
| OUT open (HiZ)                       | 10                            |
| OUT to GND                           | 20                            |
| OUT to VS                            | 15                            |
| OUT functional, not in specification | 50                            |
| Pin to Pin short any two pins        | 5                             |

## **(1) Failure Rate, Mission Profile and Failure Mode Distribution**

The failure rate and mission profile information comes from the Reliability data handbook IEC TR 62380 using the reliability modeling for Integrated circuits.

Mission Profile Automotive Control IEC TR 62380

Power dissipation 10mW

Climate type: World-wide Table 8 IEC TR 62380

Package factor lambda 3 Table 17b IEC TR 62380

Substrate Material: FR4

EOS FIT rate assumed = 0

The failure mode distribution estimation comes from the combination of common failure modes listed in standards such as IEC 61508 and ISO 26262, the ratio of sub-circuit function size and complexity and from best engineering judgment.

INA180-Q1 is a catalog product and not compliant to ISO-26262 standards.

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